PATENT
Docket No. 56109US011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:			
DELTON R. THOMPSON, JR. et al.		Group Art Unit:	1791
		Confirmation No.	9972
Serial No.:	10/728,555		
Filed:	December 5, 2003	Examiner:	P. Butler
For:	FIBROUS NONWOVEN WEBS		

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office on and the date indicated below via the Office electronic filing system.

November 3, 2008 — Date

Judy L. Hansen — Signature Judy L. Hansen

DECLARATION OF DAVID A. OLSON

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

David A. Olson declares as follows:

1. I am an employee of 3M Company, working in the field of fibrous webs, especially nonwoven webs of air-laid staple fibers, and webs prepared by meltblowing polymeric materials. I have worked at 3M in the field of fibrous webs and in meltblowing of fibers for over 20 years.

2. I am a named inventor for the above-captioned Thompson et al. (hereafter, "Thompson") patent application.

3. I have read the most recent Office Action (mailed May 6, 2008) for the above-captioned Thompson patent application, and I have read Buntin, U.S Patent No. 3,849,241, cited as a reference against the patent application. Through my work I have been extensively involved in the meltblowing of polypropylene, which is the primary subject of Buntin.

4. I have also noted the discussion in Buntin in the paragraph bridging columns 9 and 10 as to when a temperature treatment as taught by Bunin is "adequate." Buntin states:

> When the resin is correctly thermally treated in the extruder, the resin pressure lies in a small range independent of the melt flow rate or intrinsic viscosity of the starting resin

> or the nozzle die temperature. ... [B]y calculating the apparent viscosity of the degraded resin in the nozzle die holes 6 according to methods well known in polymer rheology [citations to texts], thermal treatment produces an apparent viscosity in the nozzle die holes 6 of from about 50 to about 300 poise.

5. I am familiar with the concept of apparent viscosity, and I understand Buntin's teaching and desire that polypropylene being meltblown have a low apparent viscosity (less than 300, or 500, as stated in Buntin at column 4, lines 31-42) in order to prepare shot-free meltblown polypropylene fibers.

6. I have prepared polypropylene meltblown fibers and webs a very large number of times – countless times; and in doing so I have at times operated the process to thermally degrade the polypropylene to a lower-viscosity form as discussed by Buntin. I have also prepared PET meltblown fibers and webs a countless number of times, including preparing such PET fibers and webs by the process taught in our above-captioned Thompson patent application. In this work I have had occasion to observe the viscosity of the molten polypropylene and molten PET introduced to the meltblowing die (or extruder), for example, when resin is purged from the system during or at the end of a run. I have noted that the polypropylene is water-like in viscosity, while the PET, including that used in our invention, is like stiff molasses.

7. Although we did not report apparent viscosity of the polymeric materials in the working examples of our above-captioned patent application, I have calculated them from data in my run records using an equation referred to by Buntin in column 17, line 56 et seq. (the equation as typed in Buntin is incorrect, since the μ in the numerator after the equal sign should be π; see Macosko, C., *Rheology: Principles, Measurements, and Applications*, page 242, Eq. 6.2.12).

I found that by the stated equation the apparent viscosities of our working examples were all above 2700 poise, far greater than either the 300 or 500 poise called for by Buntin.

8. Based on my observation of the viscosity of polypropylene and PET I believe that PET, so extensively degraded as to have the viscosity of polypropylene called for by Buntin, would not be useful in our invention and would not develop the chain-extended crystallization achieved in our invention. As stated in the paragraph bridging pages 8 and 9 of our above-captioned Thompson patent specification, especially on page 9, lines 12-16, the method of our invention applies a stress on the

molten filaments extruded from the meltblowing die sufficient to straighten and orient PET polymer chains in the filaments and develop a chain-extended crystallization. In my opinion PET degraded to the point taught by Buntin would not have the melt strength at the exit of the die orifice, or the molecular properties, required to undergo the stress experienced in developing chain-extended crystallization by the subject invention. PET resins processed in the manner described in our patent specification will develop chain-extended crystallization, but PET degraded to Buntin's water-like viscosity would not develop such chain-extended crystallization, in my opinion.

9. The idea discussed in Buntin of degrading polypropylene to a low-viscosity form to improve the melt-blowing operation has been well known to persons skilled in the meltblowing art for many years. I was aware of such an idea long before the making of the invention of dimensionally stable PET meltblown webs disclosed in the above-captioned Thompson patent application. It never occurred to me that the idea of degrading polypropylene discussed in Buntin had any relation to the problem of dimensional instability of PET meltblown webs or the solution of that problem, and as discussed above, I believe they are in fact unrelated. I would never have turned to Buntin's teachings in an effort to solve the dimensional stability problem of meltblown PET fibrous webs, and in my opinion no person skilled in the art of meltblowing would have turned to Buntin's teachings to attempt to solve that problem. In fact, degrading PET to the low-viscosity form sought by Buntin is inconsistent with and contrary to the steps needed to achieve dimensionally stable PET meltblown webs, and in my opinion persons skilled in the meltblowing art seeking to solve the dimensional instability problem of meltblown PET webs would seek to avoid the degradation that Buntin seeks.

10. I declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under 18 USC § 1001 and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

10-30-2008
Date

David A. Olson